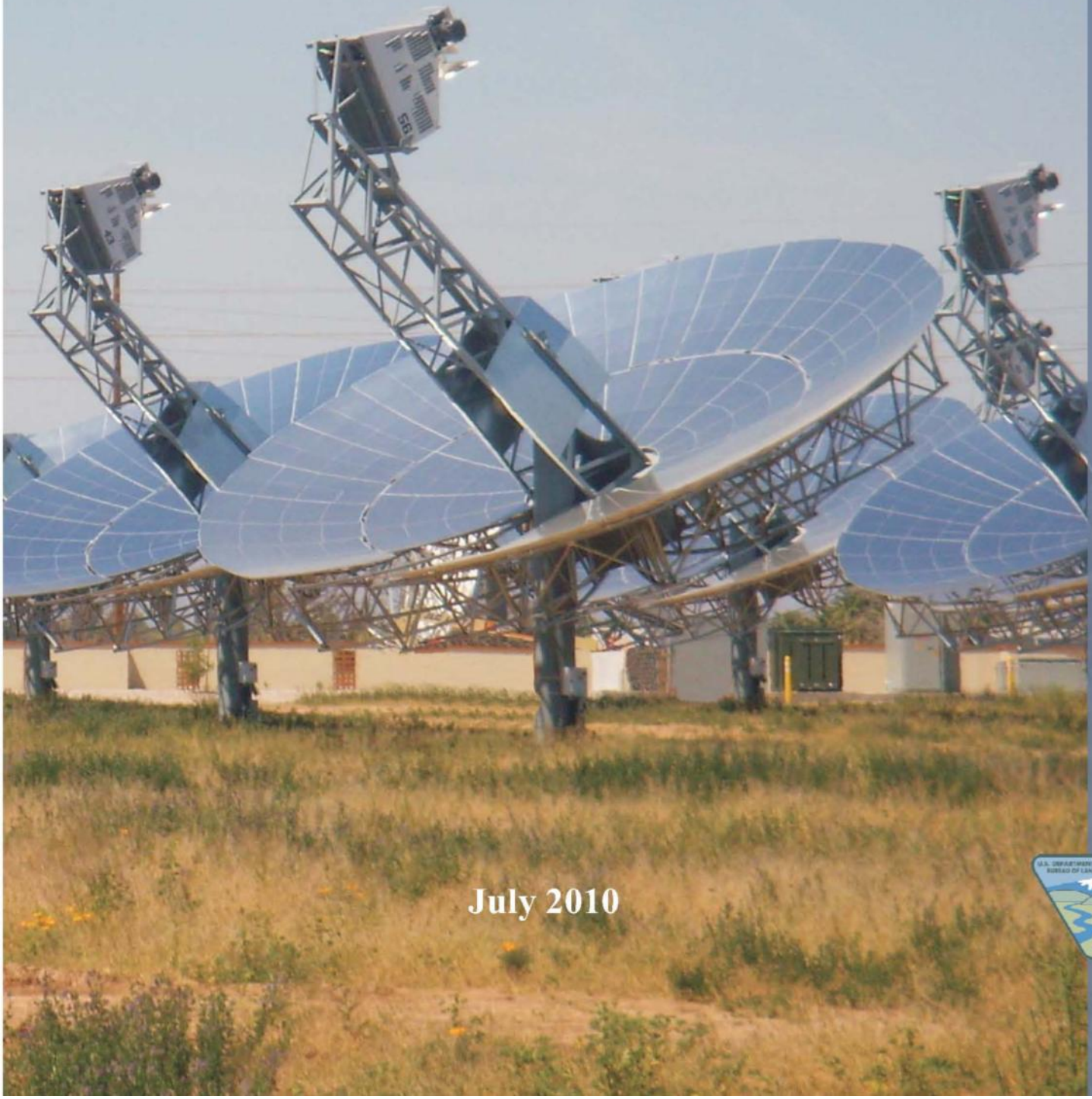
Final Environmental Impact Statement
Imperial Valley Solar Project

VOLUME 1 OF 2



July 2010

Executive Summary

Background and Organization of the Final Environmental Impact Statement

Background on the Environmental Process

In August 2007, the California Energy Commission (CEC) and the United States Bureau of Land Management (BLM) California Desert District (CDD) entered into a Memorandum of Understanding (MOU) to jointly develop the environmental analysis documentation for solar thermal projects which are under the jurisdiction of both agencies. Consistent with that MOU, the CEC and the BLM prepared a joint environmental compliance document to address the requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) for the Imperial Valley Solar (IVS) project. Specifically, a Staff Assessment/Draft Environmental Impact Statement (SA/DEIS) was prepared and was circulated for agency and public review and comment between February 12, 2010 and May 28, 2010. The SA/DEIS is incorporated by reference in this Final Environmental Impact Statement (FEIS). The IVS project was originally named and referred to as the Solar Two project. The name was changed to the IVS project by the applicant after the publication of the SA/DEIS.

The BLM and the CEC prepared separate final documents for compliance with NEPA and CEQA, respectively. Specifically, the BLM prepared this FEIS for the 750 MW Alternative (IVS project). The SA/DEIS was the primary reference used in preparing this FEIS. The SA/DEIS is incorporated by reference in this FEIS. The comments received on the DEIS are addressed in this FEIS. After the publication of this FEIS, the BLM will prepare a Record of Decision (ROD) regarding the 709 MW Alternative (Agency Preferred Alternative). The publication of the ROD in the Federal Register is the final step required of the BLM to meet the requirements of NEPA for the IVS project.

Project Description

The IVS project is a privately proposed solar power farm that would be located on approximately 6,500 acres (ac) of vacant land in southwestern Imperial County, California, south of Evan Hewes Highway and north of Interstate 8 (I-8). The IVS project site includes about 6,140 ac of Federal land managed by the BLM and approximately 360 ac of privately owned land. The site is about 100 miles (mi) east of San Diego, 14 mi west of El Centro, approximately 4 mi east of Ocotillo Wells, and south of a gypsum processing site known as Plaster City.

The IVS project would be a primary power generating facility constructed in two phases. Phase I would include the construction and operation of a 300-megawatt (MW) facility and Phase II would include the construction and operation of facilities to generate an additional 450 MW. Power would be generated by up to 30,000 SunCatcher solar dish collectors

Organization of the Final Environmental Impact Statement

This FEIS provides detailed descriptions of the IVS project, the Agency Preferred Alternative, the other Build Alternatives, and the three No Action Alternatives evaluated in detail in the SA/DEIS and the FEIS. The FEIS describes the existing environmental setting and the potential impacts of the evaluated Alternatives. Mitigation measures for adverse impacts are provided. Section 1.5, Guide to the Final EIS, provides a detailed description of the organization and content of this FEIS.

Lead Agencies' Roles and Responsibilities

The CEC has the exclusive authority to certify the construction, modification, and operation of thermal electric power plants in California which generate 50 or more MW. The CEC certification is in lieu of any permit required by State, regional, or local agencies. The CEC must review power plant Applications for Certification (AFCs) to assess potential environmental impacts and compliance with applicable laws, ordinances, regulations, and standards (LORS). The CEC analyses regarding the IVS project in the SA/DEIS were prepared in accordance with the requirements of CEQA.

The BLM's authority for the proposed action includes the Federal Land Policy and Management Act (FLPMA) of 1976, Section 211 of the Energy Policy Act, and BLM's Solar Energy Development Policy. The FLPMA authorizes the BLM to issue right-of-way (ROW) grants for renewable energy projects. BLM's authority also extends to the BLM lands in the California Desert District, which are governed by the *California Desert Conservation Area Plan* (CDCA Plan, 1980, as amended). Because the CDCA Plan would need to be amended to allow the IVS project on the project site, BLM would also oversee that CDCA Plan amendment process for the project.

Section 404 of the Federal Clean Water Act (CWA) authorizes the Secretary of the Army, acting through the United States Army Corps of Engineers (Corps), to issue permits regulating the discharge of dredged or fill material into the waters of the United States (waters of the U.S.). The Corps has the authority to regulate such discharges on the project site.

Purpose and Need

Bureau of Land Management Purpose of and Need for the Proposed Action

The BLM's purpose and need for the IVS project is to respond to Imperial Valley Solar, LLC's (now Tessera Solar, LLC) application under Title V of FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar energy generation facility on public lands in compliance with FLPMA, BLM ROW regulations, and other applicable Federal laws. The BLM will decide whether to approve, approve with modification, or deny issuance of a ROW grant for the IVS project. BLM's actions will also include consideration of amending the CDCA Plan to allow for solar power generation on the project site. If the BLM decides to approve the issuance of a ROW grant for the IVS project, it must first amend the CDCA Plan to allow for that solar use on the site. Section 1.2.1, Bureau of Land Management Purpose of and Need for the Proposed Action, provides additional discussion regarding the BLM purpose and need for the proposed action.

United States Army Corps of Engineers Purpose of and Need for the Proposed Action

The CWA Section 404(b)(1) Guidelines (Guidelines) promulgated by the United States Environmental Protection Agency (EPA) explain that, when an action is subject to NEPA and the Corps is the permitting agency, the analysis of alternatives prepared for NEPA will in most cases provide the information needed for analysis under the Guidelines. The Guidelines also state that, in some cases, the NEPA document may have addressed "…a broader range of alternatives than required to be considered under [the Guidelines] or may not have considered alternatives in sufficient detail to respond to the details of these Guidelines. In the latter case, it may be necessary to supplement these NEPA documents with this additional information." (40 CFR 230.10(a)(4)). In light of this statement in the Guidelines, and because the project purpose statements under NEPA and the Guidelines are not necessarily identical, the Corps has reviewed and refined the project purpose to ensure it meets the standards of the Guidelines.

For CWA Section 404 purposes, the Corps' *Draft Section 404B-1 Alternatives Analysis for the Imperial Valley Solar Project* (Ecosphere Environmental Consulting, July 13, 2010) provided in Appendix H provides the following statement of basis and overall project purpose:

> "The basic project purpose comprises the fundamental, essential, or irreducible purpose of the proposed action, and is used by the Corps to determine whether

an applicant's project is water dependent (i.e., whether it requires access or proximity to or siting within a special aquatic site).

"The basic project purpose for the proposed action is "Energy Production." Although the basic project purpose is not water dependent, the project will not affect any special aquatic sites. Therefore, the rebuttal presumptions that there are less damaging alternatives for the proposed activity that would not affect special aquatic sites does not apply (40 CFR 230.10(a)(3)).

"The overall project purpose serves as the basis for the Corps Section 404B-1 Alternatives Analysis and is determined by further defining the basic project purpose in a manner that more specifically describes the applicant's goals for the project, and which allows a reasonable range of alternatives.

"The Corps' overall project purpose is 'To provide a solar energy facility ranging in size from 300 MW to 650 MW in Imperial County, California.'"

The Corps is a cooperating agency with the BLM on the FEIS.

Department of Energy Purpose and Need

The Energy Policy Act of 2005 established a Federal loan guarantee program for eligible energy projects that employs innovative technologies. Title XVII of the Energy Policy Act authorizes the Secretary of Energy to make loan guarantees for a variety of types of projects, including those that "…avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases, and employ new or significantly improved technologies as compared to commercial technologies in service in the U.S. at the time the guarantee is issued." The two purposes of the loan guarantee program are to encourage commercial use in the United States of new or significantly improved energy-related technologies and to achieve substantial environmental benefits. The purpose and need for action by the Department of Energy (DOE) is to comply with its mandate under the Energy Policy Act by selecting eligible projects that meet the goals of that Act.

The DOE is a cooperating agency with the BLM on the FEIS.

Proposed Action and Alternatives to the Proposed Action

Table ES-1 summarizes the IVS project, the Agency Preferred Alternative, the other Build Alternatives, and the No Action Alternatives evaluated in this FEIS. The IVS project is the originally proposed action. All these Alternatives are described in detail in Chapter 2, Alternatives Including the Proposed Action. Table ES-1 also indicates which of these Alternatives would meet the BLM purpose and need for the project.

Table ES-1 Summary of Alternatives Evaluated in Detail in the FEIS

Alternative	Comments
IVS Project: 750 MW Alternative 750 MW 6,500 ac (6,144 ac BLM and 332 ac privately owned) 30,000 SunCatchers	This is the IVS project and was the original proposed action. This Alternative meets the BLM project purpose and need.
709 MW Alternative: Agency Preferred Alternative 709 MW 6,500 ac (6,144 ac BLM and 332 ac privately owned) 28,360 SunCatchers	This is the BLM Agency Preferred Alternative; it is also the Corps' preliminary Least Environmentally Damaging Practicable Alternative (LEDPA) as described by the Corps in the *Draft 404B-1 Alternatives Analysis*, which is provided in Appendix H. This Alternative meets the BLM project purpose and need.
300 MW Alternative 300 MW (40% of the MW of the IVS project) 2,600 ac (40% of the acreage of the IVS project) 12,000 SunCatchers (40% of the IVS project)	This is a reduced project using the same SunCatcher technology as the IVS project. This Alternative meets the BLM project purpose and need.
Drainage Avoidance #1 Alternative 632 MW (83% of the MW of the IVS project) 4,690 ac (72% of the acreage of the Proposed Action) 25,000 SunCatchers (83% of the IVS project)	This is a reduced project using the same SunCatcher technology as the IVS project. This Alternative was developed in consultation with the Corps to avoid drainages on the project site. This Alternative meets the BLM project purpose and need.
Drainage Avoidance #2 Alternative 423 MW (56% of the MW of the IVS project) 3,153 ac (49% of the acreage of the Proposed Action) 10,240 SunCatchers (42% of the IVS project)	This is a reduced project using the same SunCatcher technology as the IVS project. This Alternative was developed in consultation with the Corps to avoid drainages on the project site. This Alternative meets the BLM project purpose and need.

Alternative	Comments
No Action Alternative: No ROW Grant and No CDCA Plan Amendment BLM does not approve the ROW Grant for the IVS project BLM does not amend the CDCA Plan	This No Action Alternative was evaluated in the SA/DEIS under both CEQA and NEPA.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar BLM does not approve the ROW grant for the IVS project BLM amends the CDCA Plan to make the project site unavailable for future solar development	This No Action Alternative was evaluated in the SA/DEIS under NEPA only. This is not a typical No Action Alternative because the BLM would take action to amend the CDCA Plan under this Alternative. However, it was evaluated because it provided an opportunity for the BLM to consider the effects of not approving the ROW grant application and also amending the CDCA Plan to make the specific IVS project site unavailable for further solar development.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar BLM does not approve the ROW grant for the IVS project BLM amends the CDCA Plan to make the project site available for future solar development	This No Action Alternative was evaluated in the SA/DEIS under NEPA only. This is not a typical No Action Alternative because the BLM would take action to amend the CDCA Plan under this Alternative. However, it was evaluated because it provided an opportunity for the BLM to consider the effects of not approving the ROW grant application and also amending the CDCA Plan to make the specific IVS project site available for further solar development.

Table Source: LSA Associates, Inc. (2010).

Table Key: ac = acres; Corps = United States Army Corps of Engineers; BLM = United States Bureau of Land Management; CDCA Plan = California Desert Conservation Area Plan; CEQA = California Environmental Quality Act; IVS = Imperial Valley Solar; MW = megawatts; NEPA = National Environmental Policy Act; ROW = right-of-way; SA/DEIS = Staff Assessment/Draft Environmental Impact Statement.

The following modifications are proposed to the IVS project and the other Build Alternatives:

- **Transmission Line Alignment Modifications:** The applicant proposed modifications to the original transmission line alignment that were minor shifts in two segments of the line.

- **Waterline Alignment Modifications:** The waterline alignment was realigned slightly by the applicant to follow the Evan Hewes Highway ROW where feasible.

- **Hydrogen Storage Modifications:** The hydrogen gas supply, storage, and distribution system was modified by the applicant to increase the amount of hydrogen stored on site for each SunCatcher.

- **Alternative Water Supply Modifications:** An alternative water supply for construction and initial operations using water provided through the Dan Boyer Water Company in Ocotillo was identified by the applicant.

Additional details on these modifications are provided in Chapter 2.

After the release of the SA/DEIS for public review in February 2010, the BLM and Corps continued to coordinate and consult regarding possible refinements to avoid specific drainages on the IVS project site. The following modifications to the IVS project, to reduce effects to aquatic resources, the flat tailed horned lizard (FTHL), and cultural resources, were identified in that continued consultation:

- Relocating the Main Services Complex out of some of the primary wash segments of Drainage E

- Removing all SunCatchers within 100 ft of the centerline of Drainage E to provide a 200-ft wide corridor along this drainage through the site

As a result of these modifications to the IVS project, the following specific changes were made to that Alternative, which resulted in a 709 MW Alternative, which has been identified by the BLM as the Agency Preferred Alternative:

- Reduction in the total number of SunCatchers from 30,000 to 28,360 SunCatchers

- Reduction in the amount of energy generated from 750 MW to 709 MW

The 709 MW Alternative would be on the same approximately 6,500 ac as the IVS project, except that specific areas within the site, particularly along Drainage E, would be avoided and no project construction or structures would occur in those areas.

The Agency Preferred Alternative would require the following BLM actions:

- Compliance with the requirements of NEPA

- Amendment of the CDCA Plan to reflect the use of the site for solar energy generation

- Approval of a ROW grant for the approximately 6,144 ac of land under BLM jurisdiction

The Agency Preferred Alternative is also the preliminary Least Environmentally Damaging Practicable Alternative (LEDPA) as described by the Corps in the *Draft 404B-1 Alternatives Analysis*, which is provided in Appendix H. The Corps participated in the development of this alternative and is currently in the process of a detailed evaluation of the analysis along with the EPA. A Final 404(b)(1) Alternatives Analysis and LEDPA determination will be included as part of the Corps' Record of Decision (ROD).

Connected and Cumulative Actions

There are no other actions that are connected to the IVS project that would require any action from the BLM.

There are a large number of renewable energy and other projects proposed throughout the California desert that were identified as potentially contributing to cumulative environmental impacts. Those cumulative projects are discussed in detail in Section 2.10, Overview of the Cumulative Impacts Analysis.

Summary of the Affected Environment

The site proposed for the IVS project is approximately 6,140 ac of public land administered by the BLM, and approximately 360 ac of private land under the jurisdiction of Imperial County. The northern boundary of the IVS project site is adjacent to Imperial County Route S80 (Route S80) and Plaster City, and the southern boundary is adjacent to I 8. The part of the site within the jurisdiction of the BLM is subject to the applicable land use management requirements in the CDCA Plan.

The IVS project site is in the south central part of the Imperial Valley region of the Salton Trough, a topographic and structural depression in the Colorado Desert physiographic province in southern California. Tectonically, the Salton Trough appears to lie on the boundary between the western edge of the North American Plate and the eastern edge of the Pacific Plate, with relative plate motion being transferred to the regional San Andreas Fault system via at least three more localized fault zones. The Colorado Desert province is characterized by broad alluvium-filled valleys and plains and is bounded to the west by the northwest trending granitic mountains of the Peninsular Ranges physiographic province and on the east by the south part of the Mojave Desert physiographic province.

The project site contains a variety of vegetation types including Sonoran creosote bush scrub, desert saltbush scrub, arrowweed scrub, tamarisk scrub, agricultural areas, disturbed areas, developed areas, ornamental areas, and open channel areas. Several ephemeral desert washes traverse the project site and convey flows during and following a substantial rainfall. The vegetation community in the washes is classified as Sonoran creosote bush scrub and also contains sparse stands of mesquite and tamarisk. The ephemeral washes generally contain a greater vegetative diversity and density than the creosote bush scrub habitat outside the washes. A variety of wildlife occupies the habitats on and in the vicinity of the project site.

Environmental Consequences of the Proposed Action Including Cumulative

Tables ES-2 through ES-17 summarize the environmental impacts that would occur as a result of the IVS project, the Agency Preferred Alternative, the other Build Alternatives, and the No Action Alternatives by environmental parameter. (Tables ES-2 through ES-17 are provided following the last page of text in this Executive Summary.) The tables also identify the mitigation measures, project features, and other measures included in the Alternatives to avoid or substantially reduce the adverse impacts of those Alternatives. The unavoidable adverse impacts that would remain after mitigation are also summarized briefly in these tables.

Areas of Controversy

Based on input received from agencies, organizations, Native Americans and Tribal Governments, and members of the general public during the scoping for the SA/DEIS and in comments on the SA/DEIS, several areas of controversy related to the IVS project are:

- Opposition to the placement of a large solar project on essentially undisturbed desert land
- Opposition to the overall number of renewable energy projects in the western United States
- Support for locating renewable energy projects in developed areas
- Concern regarding the impacts of this large project on biological and cultural resources
- Concern regarding the range of alternatives considered

Issues to be Resolved

Extensive verbal and written comments were received during the scoping process for the IVS project. The scoping process and public input received during that process are provided in detail in Appendix C, Scoping Report. The issues raised during scoping are summarized in Table ES-18, which appears at the end of this Executive Summary.

Comparison of Alternatives/Impact Summary Table

Tables ES-2 through ES-17, which were described earlier, also allow for comparison of the impacts among all the Alternatives.

Public Participation

Scoping activities were conducted by the BLM in compliance with the requirements of NEPA for the IVS project. Many of these scoping activities were conducted jointly with the CEC. The BLM's scoping activities are described in detail in the *Final Scoping Report Stirling Energy Systems Solar Two Project* (LSA Associates, Inc. September 2009), which is provided in Appendix C, Scoping Report. The scoping report documents the Notice of Intent, the scoping meetings, workshops, and the comments received during scoping.

Summary of Comments Received on the Staff Assessment/Draft Environmental Impact Statement

The SA/DEIS was circulated for public review between February 12, 2010 and May 27, 2010. The Notice of Availability (NOA) of the SA/DEIS was published in the Federal Register on February 22, 2010. Appendix D, Public Comments on the Draft Environmental Impact Statement, includes all the written comment letters and emails received by the BLM in response to NOA. Appendix D also provides responses to the individual comments and copies of all the written comment letters and emails.

Organizations and Persons Consulted

In addition to the scoping and SA/DEIS public review processes, the BLM has been consulting and coordinating with public agencies who may be requested to take action on the IVS project. That ongoing consultation and coordination is discussed in the following sections.

United States Fish and Wildlife Service

The BLM permit, consultation, and conferencing with the United States Fish and Wildlife Service (USFWS) required for the IVS is to comply with the Federal Endangered Species Act (ESA) for potential take of the Peninsular bighorn sheep and the FTHL. Because Federal agency action has been identified for the IVS project, Section 7 consultation/conferencing between the BLM and USFWS is required prior to any take authorization for the IVS project under the ESA from the USFWS. The BLM has submitted a Biological Assessment (BA) for take of Peninsular bighorn sheep and FTHL to the USFWS for the IVS project. Although the FTHL is not Federally listed under the ESA at this time, it is anticipated this species may be listed during the construction or operation of the IVS project. To avoid or reduce possible time constraints, the FTHL was included in the BA, should this species become Federally listed. The process of consultation with USFWS for the IVS project is ongoing.

United States Army Corps of Engineers

Project-related fill of waters of the U.S. would require authorization by the Corps pursuant to Section 404 of the Federal CWA under a Standard Individual Permit. The CWA Section 404(b)(1) Guidelines govern the issuance of permits authorizing the discharge of fill material into waters of the United States, and state that:

> . . . no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. (40 CFR Section 230.10, Subdivision a).

Under the Section 404 (b)(1) Guidelines, the applicant must demonstrate avoidance or minimization of impacts to waters of the U.S. to the maximum extent practicable. Under those requirements, the Corps can only issue a CWA Section 404 permit for the LEDPA. In addition, the Corps is prohibited from issuing a permit that is contrary to the public interest. (33 CFR Section 320.4).

The Corps' assessment of the proposed project and alternatives emphasizes avoidance and minimization of impacts to waters of the U.S. The assessment method for evaluating temporary and permanent impacts to the physical and biological attributes of the aquatic environment was used by the Corps in preparing the *Draft Section 404B-1 Alternatives Analysis* in accordance with the Section 404(b)(1) Guidelines. The Corps' *Draft Section 404B-1 Alternatives Analysis* is provided in Appendix H. A Final Section 404(b)(1) Alternatives Analysis will be provided with the Corps' ROD. The evaluation of impacts and the development of appropriate mitigation

measures will also be used to demonstrate compliance with requirements for the applicant to provide compensatory mitigation for impacts to waters of the U.S. On April 28, 2008, effective June 10, 2008, the Corps issued new requirements for mitigation (the Mitigation Rule). (73 Federal Register 19594-19705 [April 10, 2008].) As discussed in the Mitigation Rule, the Corps will consider a variety of methods to ensure that any required compensatory mitigation for impacts to jurisdictional waters of the U.S. provides adequate compensation for the loss of physical and biological functions and services in the project area.

The process of consultation with Corps for the IVS project is ongoing. As noted earlier, the Corps is a cooperating agency with the BLM on the FEIS.

National Park Service

The Anza Trail is a cultural resource of national significance for its association with important events in our history and its associations with important persons in our early history, as well as for its information potential. The United States Department of the Interior National Park Service (NPS) is the administrator of the Anza Trail. BLM is consulting with the NPS regarding the Anza Trail corridor in the project area. The consultation with the NPS for the IVS project is ongoing. The NPS is a cooperating agency with the BLM on the FEIS.

Native American Consultation and Coordination

A key part of a cultural resources analysis under CEQA, NEPA, and Section 106 of the National Historic Preservation Act of 1966 (NHPA) is to determine which of the cultural resources that a proposed or alternative action may affect are important or historically significant. In accordance with 36 Code of Federal Register (CFR) Part 800.14(b), Programmatic Agreements (Pas) are used for the resolution of adverse effects for complex project situations and when effects on historic properties (resources eligible for or listed in the National Register of Historic Places (National Register) cannot be fully determined prior to approval of an undertaking. The BLM is preparing a PA in consultation with the Advisory Council on Historic Preservation (ACHP), the State Historic Preservation Officer (SHPO), the CEC, interested tribes (including tribal governments as part of government-to-government consultation), and other interested parties. The PA will govern the continued identification and evaluation of historic properties (eligible for the National Register) and historical resources (eligible for the California Register of Historic Places), as well as the resolution of any effects that may result from the IVS project. The consultation with the ACHP, SHPO and Native American Tribal Governments for the IVS project is ongoing.

California Department of Fish and Game

Consultation with the California Department of Fish and Game (CDFG) is anticipated for the impacts to FTHL habitat and possible impacts to waters of the State. It is possible CDFG will determine that a Lake and Streambed Alteration Agreement may be required for the IVS project for the impacts to jurisdictional state waters. The process of consultation with CDFG for the IVS project is ongoing.

Table ES-2 Summary of Air Quality Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	Short-term dust and vehicle emissions during construction. Long-term dust, and mobile and stationary fuel/combustion emissions. Beneficial long-term effect associated with the reduction in greenhouse emissions and would not contribute to cumulative adverse impacts.	**Project Design Features** Exhaust emissions control and fugitive dust control. Use of an NSPS-compliant emergency generator, certified tank filling and vehicle refueling vapor recover systems for the 5,000 gal fuel tank, and detailed measures for the operation and maintenance vehicles. **Construction Measures** *AQ-SC1:* Air Quality Construction Mitigation Manager *AQ-SC2:* Air Quality Construction Mitigation Plan *AQ-SC3:* Construction fugitive dust control *AQ-SC4:* Dust plume response requirement *AQ-SC5:* Diesel-fueled engine control **Operations Measures** *AQ-SC6:* Vehicles must meet applicable vehicle emissions standards. *AQ-SC7:* Operations Dust Control Plan. *AQ-SC8:* ICAPCD Authority-to-Construct and Permit-to-Operate documents. *AQ-SC9:* Emergency generator to meet or	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
		exceed applicable emissions standards. *AQ-SC10:* Gasoline tank to meet or exceed all vapor recovery and standing loss requirements. **ICAPCD Regulations** *Rule 201:* Authority-to-Construct and Permit-to-Operate documents. *Regulation IV:* Prohibitions (Rule 207: new and modified stationary source requirements, Rule 400: on fuel burning equipment, Rule 401: opacity of emissions, Rule 403: general limitation on the discharge of air contaminants, Rule 405: sulfur compounds emissions standards, limitations, and prohibitions, and Rule 407: nuisance). *Regulation VIII:* Fugitive Dust Rules (Rule 800: general requirements for control of fine particulate matter, Rule 801: construction and earthmoving activities, Rule 802: bulk materials, Rule 803: carry-out and track-out, Rule 804; open areas, Rule 805: paved and unpaved roads, and Rule 806: conservation management practices). *Regulation XI:* NSPS (Rule 1101: NSPS).	
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	Same as the IVS project.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
300 MW Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #1 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #2 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	No short- or long-term dust or vehicle emissions. No long-term beneficial effect.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	No short- or long-term dust or vehicle emissions. No long-term beneficial effect.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Potential for short- and long-term dust and vehicle emissions and beneficial effects similar to the Agency Preferred Alternative and the IVS project.	None specified.	Not determined.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; gal = gallon; ICAPCD = Imperial County Air Pollution Control District; IVS = Imperial Valley Solar; MW = megawatts; NSPS = New Source Performance Standards; ROW = right-of-way.

Table ES-3 Summary of Biological Resources Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	• Permanent loss of vegetation communities • Permanent loss of waters of the U.S. and CDFG jurisdictional streambeds • Potential loss of some special-status plant species • Affects on raptors, migratory, and special-status bird species • Take of burrowing mammals • Potential effects on Peninsular bighorn sheep • Take of FTHL • Potential harm to birds from total dissolved solids in evaporation ponds • Attraction to ponds will increase risk of avian collisions with transmission towers • Introduction of noxious weed seed to the project site	• Minimization of vegetation community removal • Funding to BLM for acquisition of 6,619.9 acres of equivalent lands to offset impacts to vegetation communities and suitable for FTHL • Acquisition and preservation of lands with nonwetland waters of the U.S. to be preserved at 1:1 (preservation: impacts) and enhancement, restoration, creation of nonwetland Waters of the U.S. at 2:1(enhancement/restoration/creation: impacts). CDFG will require acquisition and preservation at 1:1 for impacts to CDFG jurisdictional streambeds. • If special-status plant species can not be avoided during construction, required mitigation will be replacement at 2:1 • Avoidance of impacts to vegetation communities to the greatest extent feasible, measures to protect nesting birds, measures to reduce/eliminate risk of bird electrocution, and passive relocation for western burrowing owls. • Passive relocation of American badger and desert kit fox. • Fencing of project site to exclude	Unavoidable adverse impacts to the FTHL individually and on a cumulative basis. No other unavoidable adverse impacts.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
		Peninsular bighorn sheep • Exclusionary netting/mesh on evaporation ponds will eliminate risk of bird mortality from ingesting toxic/hypersaline waters • Evaporation ponds located away from transmission towers • Noxious weed management measures during construction **Construction Measures** *BIO-1:* Designated biologist *BIO-2:* Construction monitoring *BIO-3:* FTHL special biologist *BIO-4:* Construction monitors *BIO-5:* Construction measure compliance *BIO-6:* Biological monitoring, construction crew training and compliance *BIO-8:* Biological Mitigation Plan implementation and monitoring *BIO-9:* FTHL Management Strategy *BIO-14:* Bird nesting period avoidance and surveys *BIO15:* American badgers and desert kit fox, pre-construction surveys and avoidance *BIO-16:* Burrowing owl pre-construction surveys and avoidance *BIO-19:* State and Federally listed species pre-	

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
		construction surveys and mitigation strategy **Operations Measures** *BIO-7:* Biological Resources Mitigation Plan *BIO-8:* Biological Mitigation Plan implementation and monitoring *BIO-10:* FTHL habitat loss compensation *BIO-11:* Regulatory agency personnel site access for compliance monitoring *BIO-12:* Raven Monitoring and Control Plan *BIO-13:* Evaporation pond wildlife exclusionary measures *BIO-17:* Jurisdictional wetlands compensation *BIO-18:* Noxious Weed Management Plan *BIO-20:* Decommissioning and Reclamation Plan	
709 MW Alternative: Agency Preferred Alternative	Slightly fewer impacts than the IVS project because slightly fewer acres on the site would be affected.	Same as the IVS project.	Same as the IVS project.
300 MW Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
Drainage Avoidance #1 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Drainage Avoidance #2 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Potentially the same or similar impacts as the IVS project and the Agency Preferred Alternative because the site could be developed in a solar use.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.

Table Source: LSA Associates, Inc. (2010).

Table Key: BLM = United States Bureau of Land Management; CDCA Plan = California Desert Conservation Area Plan; CDFG = California Department of Fish and Game; FTHL = flat-tailed horned lizard; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way; U.S. = United States;

Table ES-4 Summary of Climate Change Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	Generation of GHG emissions during construction and operation of the SunCatchers. Beneficial effect in replacing high GHG emitting electricity generation with a lower greenhouse emission renewable energy source.	None. Possible need to comply with any future GHG regulations.	None.
709 MW Alternative: Agency Preferred Alternative	Generation of slightly lower GHG emissions during construction and operations than the IVS project. Beneficial cumulative effect in replacing high GHG emitting electricity generation with a lower greenhouse emission renewable energy source.	Same as the IVS project.	None.
300 MW Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #1 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under	Same as the IVS project and the Agency Preferred Alternative.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
	this Alternative.		
Drainage Avoidance #2 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	No GHG emissions or beneficial effects on the project site.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	No GHG emissions or beneficial effects on the project site.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Could potentially result in GHG emissions and GHG reduction benefits similar to the IVS project and the Agency Preferred Alternative.	None specified.	Not determined.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; GHG = greenhouse gas; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way.

Table ES-5 Summary of Cultural and Paleontological Resources Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	**Cultural Resources** Adverse effect on historic properties. **Paleontological Resources** Adverse impacts during construction to formations with moderate to high sensitivity.	**Cultural Resources** • Identify and evaluate cultural resources in the final APE. • Avoid and protect potentially significant resources. • Develop and implement HPTPs. • Conduct data recovery or other actions to resolve adverse effects. • Monitor construction at known ESAs. • Train construction personnel. • Properly treat human remains. • Monitor construction in areas of high sensitivity for buried resources. • Continue consultation with Native American and other traditional groups. • Protect and monitor National Register-eligible and/or California Register-eligible properties. • Complete identification efforts for the Anza Trail and coordinate mitigation efforts. **Paleontological Resources** *PAL-1:* PRS for mitigation monitoring *PAL-2:* Project maps and construction scheduling information to the PRS. *PAL-3:* PRMMP.	Unavoidable adverse impacts after mitigation to cultural resources as a result of the loss of resources. No unavoidable adverse impacts after mitigation to paleontological resources.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
		PAL-4: Worker training. *PAL-5:* Construction monitoring. *PAL-6:* Implementation of all components of the PRMMP. *PAL-7:* Paleontological Resources Report.	
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	Same as the IVS project.	Same as the IVS project.
300 MW Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
Drainage Avoidance #1 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
Drainage Avoidance #2 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	No effect on historic properties and paleontological resources.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	No effect on historic properties and paleontological resources.	None.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Potentially the same impacts on historic resources and paleontological resources as the IVS project covering the entire site.	None specified.	Not determined.

Table Source: LSA Associates, Inc. (2010).

Table Key: APE = Area of Potential Effects; California Register = California Register of Historical Resources; CDCA Plan = California Desert Conservation Area Plan; ESA = Environmentally Sensitive Area; HPTP = Historic Properties Treatment Plan; IVS = Imperial Valley Solar; MW = megawatts; National Register = National Register of Historic Places; PRMMP = Paleontological Resources Monitoring and Mitigation Plan; PRS = Paleontological Resource Specialist; ROW = right-of-way.

Table ES-6 Summary of Fire and Fuels Management Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	Potential for increases in fuel from vegetation; and fires during construction and operation.	WORKER-1: Project Construction Safety and Health Program WORKER-2: Project Operations Safety and Health Program	None.
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	Same as the IVS project.	None.
300 MW Alternative	Reduced risk compared to the IVS project and the Agency Preferred Alternative due to the reduced size of the project.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #1 Alternative	Reduced risk compared to the IVS project and the Agency Preferred Alternative due to the reduced size of the project.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #2 Alternative	Reduced risk compared to the IVS project and the Agency Preferred Alternative due to the reduced size of the project.	Same as the IVS project and the Agency Preferred Alternative.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	None.	None.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Possibly similar to the Agency Preferred Alternative and the IVS project.	None specified.	Not determined.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way.

Table ES-7 Summary of Geology, Soils, Topography, Mineral Resources, and Seismic Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	Potential effects to project structures associated with seismic ground motion, liquefaction, local subsidence, and expansive soil. No impacts related to mineral resources and Mineral Resources Zones. No contribution to regional subsidence,	*GEO-1:* compliance with building codes and regulations. *GEO-2:* design of drainage structures, grading plan, erosion and sedimentation plan; and soils, geotechnical, or foundation plans.	None.
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	Same as the IVS project.	None.
300 MW Alternative	Similar to the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #1 Alternative	Similar to the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #2 Alternative	Similar to the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	No impacts related associated with seismic ground motion, liquefaction, local subsidence, expansive soil, mineral resources. and Mineral Resources Zones.	None.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	No impacts related associated with seismic ground motion, liquefaction, local subsidence, expansive soil, mineral resources. and Mineral Resources Zones.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Impacts potentially similar to the Agency Preferred Alternative and the IVS project	None specified.	Not determined.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way.

Table ES-8 Summary of Grazing, and Wild Horses and Burros Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	No impacts to grazing or rangelands, designated Herd Areas or Herd Management Areas, wild horses and burros, or conflicts with the CDCA Plan Wild Horse and Burro Element. No contribution to cumulative impacts related to wild horses and burros.	None required.	None.
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	None required.	None.
300 MW Alternative	Same as the IVS project and the Agency Preferred Alternative.	None required.	None.
Drainage Avoidance #1 Alternative	Same as the IVS project and the Agency Preferred Alternative.	None required.	None.
Drainage Avoidance #2 Alternative	Same as the IVS project and the Agency Preferred Alternative.	None required.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	Same as the IVS project and the Agency Preferred Alternative.	None required.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	Same as the IVS project and the Agency Preferred Alternative.	None required.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Same as the IVS project and the Agency Preferred Alternative.	None required.	None.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way.

Table ES-9 Summary of Land Use Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	The IVS project would impact planned land uses as designated in the CDCA Plan (1980 as amended) and the WECO Off-Road Vehicle Access and Trail System designated Open Routes. The conversion of 6,500 ac of land would constrain the existing recreational uses on site and would result in adverse effects on recreational users of these lands. Approximately 1 million acres of land are proposed for solar and wind energy development in the Southern California desert lands. The conversion of these lands would preclude numerous existing land uses including recreation, wilderness, rangeland, and open space, and therefore, result in an adverse cumulative impact.	*LAND-1:* Legal parcel creation through Subdivision Map Act Amendment of the CDCA Plan to allow this solar project on the site. Amendment of the WECO Off-Road Vehicle Access and Trail System designated Open Routes on the project site.	The IVS project would result in unavoidable adverse impacts related to the conversion of 6,500 ac of land and recreational users of these lands; reduced OHV access routes and recreational opportunities on the site as envisioned in the CDCA Plan and the WECO amendment. The IVS project, with other solar and wind energy development in the Southern California desert, would contribute to a cumulative adverse impacts related to he conversion of those lands.
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	Same as the IVS project.	Same as the IVS project.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
300 MW Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
Drainage Avoidance #1 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
Drainage Avoidance #2 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Not determined, but could be potentially similar to the impacts under the Agency Preferred Alternative and the IVS project.	Not determined, but could be potentially similar to the IVS project and the Agency Preferred Alternative.	Not determined, but could be potentially similar to the IVS project and the Agency Preferred Alternative.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way; WECO = Western Colorado Desert Routes of Travel Designations.

Table ES-10 Summary of Noise Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	Potential short-term adverse impacts during construction. Potential long-term increases in noise levels during operations.	*NOISE-1:* Notice of the initiation of construction and telephone contact information for complaints during construction and the first year of operation. *NOISE-2:* Implementation and documentation of the noise complaint process and the Noise Complaint Resolution Form during construction and operation. *NOISE-3:* Development and implementation of a noise control program during construction. *NOISE-4:* Community noise survey and implementation of measures to meet specific noise restrictions during operations. *NOISE-5:* Occupational noise survey and appropriate mitigation during operations. *NOISE-6:* Construction time restrictions.	None.
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	Same as the IVS project.	None.
300 MW Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #1 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Drainage Avoidance #2 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Same as the Agency Preferred Alternative and IVS project.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way.

Table ES-11 Summary of Public Health and Safety, and Hazardous Materials Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	During construction, operations, and decommissioning, the IVS project may result in potential risks to public health related to airborne dust; equipment and vehicle emissions; use, handling, storage, and disposal of hazardous materials; and disturbance of contaminated soils. During operations, the IVS project may result in risks associated with the use and storage of quantities of hydrogen on the site, potential spills of hazardous materials, transportation of hazardous materials, seismic ground shaking, and site security.	*HAZ-1:* Use of specified hazardous materials only *HAZ-2:* Hazardous Materials Business Plan *HAZ-3*: Safety Management Plan for delivery of liquid hazardous materials *HAZ-4:* Construction Site Security Plan *HAZ-5:* Operation Security Plan *HAZ-6:* Compliance with all applicable Federal laws and regulations related to hazardous and toxic materials *WASTE-1:* Experienced and qualified professional engineer or geologist for site characterization during (if needed), demolition, excavation, and grading activities *WASTE-2:* Inspection, sampling, and written report when potentially contaminated soil is identified *WASTE-3:* Construction Waste Management Plan *WASTE-4:* Obtain a hazardous waste generator identification number from the United States Environmental Protection Agency *WASTE-5:* Proper notification and documentation of any waste management-	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
		related enforcement action by any local, state, or Federal authority *WASTE-6:* Reuse/recycling plan for at least 50% of construction and demolition materials *WASTE-7:* Operation Waste Management Plan *WASTE-8:* All spills or releases of hazardous substances, hazardous materials, or hazardous waste are properly documented, cleaned up and wastes from the release/spill are properly managed and disposed of	
709 MW Alternative: Agency Preferred Alternative	Impacts similar to but reduced compared to the IVS project because of the reduction in the disturbed area and the number of SunCatchers.	Same as the IVS project.	None.
300 MW Alternative	Impacts similar to the IVS project and the Agency Preferred Alternative, but substantially reduced in magnitude due to the reduced area and number of SunCatchers.	Same as the IVS project and the Agency Preferred Alternative	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Drainage Avoidance #1 Alternative	Impacts would be similar to the IVS project and the Preferred Agency Alternative, but reduced in magnitude due to the reduced disturbed area and number of SunCatchers in this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #2 Alternative	Impacts would be similar to the IVS project and the Preferred Agency Alternative, but reduced in magnitude due to the reduced disturbed area and number of SunCatchers in this Alternative.	Same as the IVS project and the Agency Preferred Alternative.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Not determined, but could be potentially similar to the impacts under the IVS project and the Agency Preferred Alternative.	Not determined, but could be potentially similar to the IVS project and the Agency Preferred Alternative.	Not determined, but could be potentially similar to the IVS project and the Agency Preferred Alternative.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way.

Table ES-12 Summary of Recreation Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	• Impacts to OHV Open Routes. • Vicinity impacts to the Anza Trail Corridor historic context. • Cumulative impacts to recreational opportunities in the California desert.	*REC-1:* Comprehensive Interpretive Plan for the Anza Trail	The IVS project would result in unavoidable adverse impacts after mitigation related to: The conversion of over 6,000 ac of land would disrupt current recreational activities in established Federal, State, and local recreation areas which would result in adverse effects on recreational users of these lands. Adverse land use and planning impacts to recreation opportunities on the site as envisioned in the CDCA Plan and the WECO amendment. A cumulative change to the visual and historic context of the Anza Trail to the overall recreational experience of the Anza Trail.
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	Same as the IVS project.	Same as the IVS project.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
300 MW Alternative	Impacts would be the same as for Phase I of the IVS project on approximately 2,600 ac. Therefore, the impacts would only occur on the west half of the project site and would be reduced accordingly, including reduced adverse impacts on the Anza Trail corridor compared to the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
Drainage Avoidance #1 Alternative	The conversion of 4,690 ac of land to support the components and activities associated with this Alternative would disrupt less land than under the IVS project and the Agency Preferred Alternative. The impacts to the Anza Trail would be the same as or similar to the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
Drainage Avoidance #2 Alternative	The conversion of 3,153 ac of land to support the components and activities associated with this Alternative would disrupt less land than under the IVS project and the Agency Preferred Alternative. This Alternative would be on the central part of the project site and would likely result in reduced adverse	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
	impacts on the Anza Trail corridor compared to the IVS project and the Agency Preferred Alternative.		
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	The site would be available for other solar projects, which could result recreation impacts similar to those under the IVS project and the Agency Preferred Alternative.	Potentially the same as the IVS project and the Agency Preferred Alternative.	Not determined, but potentially the same as or similar to the IVS project and the Agency Preferred Alternative.

Table Source: LSA Associates, Inc. (2010).

Table Key: ac = acres; Anza Trail = Juan Bautista de Anza National Historic Trail; CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; OHV = off-highway vehicle; ROW = right-of-way; WECO = Western Colorado Desert Routes of Travel Designations.

Table ES-13 Summary of Socioeconomics and Environmental Justice Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	No impacts related to growth, need for new housing, displacement of existing housing and residents, and government facilities and services (emergency medical services, law enforcement, education, recreation facilities). Beneficial effects related to the creation of jobs, and economic effects based on expenditures for the project. Contribution to beneficial cumulative effects but no adverse cumulative effects.	None required.	None.
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	None required.	None.
300 MW Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	None required.	None.
Drainage Avoidance #1 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	None required.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Drainage Avoidance #2 Alternative	Less than under the IVS project and the Agency Preferred Alternative because of the smaller project under this Alternative.	None required.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	No impacts to growth and no beneficial effects.	None required.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	No impacts to growth and no beneficial effects.	None required.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Same as the IVS project and the Agency Preferred Alternative.	None required.	None.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way.

Table ES-14 Summary of Special Designations Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	No impacts related to Wilderness Areas, Areas of Environmental Concern or Special Areas. Conversion of designated agricultural land to nonagricultural uses; not considered an adverse impact.	None required.	None.
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	None required.	None.
300 MW Alternative	Same as the IVS project and the Agency Preferred Alternative.	None required.	None.
Drainage Avoidance #1 Alternative	Same as the IVS project and the Agency Preferred Alternative.	None required.	None.
Drainage Avoidance #2 Alternative	Same as the IVS project and the Agency Preferred Alternative.	None required.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	No impacts related to Wilderness Areas, Areas of Environmental Concern or Special Areas. Would not result in the conversion of less designated agricultural land to nonagricultural uses.	Same as the IVS project and the Agency Preferred Alternative.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	No impacts related to Wilderness Areas, Areas of Environmental Concern or Special Areas. Would not result in the conversion of designated agricultural land to nonagricultural uses.	None required.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Not expected to impact Wilderness Areas, Areas of Environmental Concern or Special Areas. May result in the conversion of less designated agricultural land to nonagricultural uses; not considered an adverse impact.	None required.	None.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way.

Table ES-15 Summary of Traffic Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	Short-term traffic impacts on area roads during construction. Construction of a crossing of existing railroad tracks. Damage to area roads during construction. Potential glare on vehicles on area roads. No impacts related to parking, emergency services vehicle access, water traffic, and air traffic. Will not contribute to cumulative impacts sufficient to result in adverse impacts on study area roads or intersections.	TRANS-1: traffic control plan. TRANS-2: required agreement with railroad owner. TRANS-3: repair or compensation for damaged road surfaces. TRANS-4: SunCatcher Mirror Positioning Plan	None.
709 MW Alternative: Agency Preferred Alternative	Fewer impacts than the IVS project due to the smaller number of SunCatchers.	Same as the IVS project.	None.
300 MW Alternative	Fewer impacts than the IVS project and the Agency Preferred Alternative due to the smaller number of SunCatchers.	Same as the IVS project and the Agency Preferred Alternative.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Drainage Avoidance #1 Alternative	Fewer impacts than the IVS project and the Agency Preferred Alternative due to the smaller number of SunCatchers.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #2 Alternative	Fewer impacts than the IVS project and the Agency Preferred Alternative due to the smaller number of SunCatchers.	Same as the IVS project and the Agency Preferred Alternative.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	No impacts at the project site; potential impacts at sites of other renewable energy projects.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	No impacts at the project site; potential impacts at sites of other renewable energy projects.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Impacts potentially similar to the Agency Preferred Alternative and the IVS project.	None identified.	Not determined.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; ROW = right-of-way.

Table ES-16 Summary of Visual Resources Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	The IVS project would result in permanent visual changes to the desert landscape and would introduce development in an area that is visually open and predominantly free of development. The visual impacts of project grading and construction would be considerable and would include a highly industrial scene of assembly and installation of the SunCatcher units. The project will introduce new sources of glare from the SunCatchers and nighttime lighting. Visual recovery from land disturbance after decommission-ing could occur, although only over a long period of time, with implementation of a comprehen-sive revegetation program.	**Construction Measures** *VIS-7:* Setback and revegetation of staging area **Operations Measures** *VIS-1:* Surface treatment of project structures and buildings *VIS-2:* Temporary and permanent exterior lighting *VIS-3:* Realignment of proposed transmission interconnection *VIS-4:* Setback of SunCatchers from I-8 *VIS-5:* Beneficial assessment compensation to NPS/BLM for impacts to Anza Trail *VIS-6:* SunCatcher MPP	Given the high level of viewer sensitivity of the area and the fact that the site is undeveloped the visual impacts of the IVS project after mitigation are considered unavoidable and adverse after mitigation for construction and operations. The visual impacts of the IVS project in combination with other cumulative projects in the West Mesa/Yuha Desert region, and the southern California desert are considered cumulatively unavoidable and adverse after mitigation. There may be cumulative adverse visual impacts as a result of the decommissioning of the IVS project in combination with effects of decommissioning of nearby cumulative projects and the time span involved for recovery of the landscape.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
709 MW Alternative: Agency Preferred Alternative	Same as the IVS project.	Same as the IVS project.	Same as the IVS project.
300 MW Alternative	Similar to the Agency Preferred Alternative, but because of the smaller development area, the degree and extent of those impacts would be substantially less than under the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
Drainage Avoidance #1 Alternative	The visual impacts of this Alternative would be similar to the impacts under the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
Drainage Avoidance #2 Alternative	Similar to the Agency Preferred Alternative, but because of the smaller development area, the degree and extent of those impacts would be less extensive than under the IVS project and the Agency Preferred Alternative	Same as the IVS project and the Agency Preferred Alternative.	Same as the IVS project and the Agency Preferred Alternative.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	None.	None.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Potentially the same as or similar to the IVS project and the Agency Preferred Alternative.	Not determined, but could be potentially the same as or similar to the IVS project and the Agency Preferred Alternative.	Potentially the same as or similar to the IVS project and the Agency Preferred Alternative.

Table Source: LSA Associates, Inc. (2010).

Table Key: ACEC = Area of Critical Environmental Concern; BLM = United States Bureau of Land Management; CDCA Plan = California Desert Conservation Area Plan; I-8 = Interstate 8; IVS = Imperial Valley Solar; MPP = Mirror Positioning Plan; MW = megawatts; NPS = United States National Park Service; ROW = right-of-way.

Table ES-17 Summary of Water Resources Impacts by Alternative

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
IVS Project: 750 MW Alternative	The construction, operation, and decommissioning of the IVS project could potentially adversely impact soils, surface water, flooding, surface water quality, groundwater quality, and water supply. The IVS project will result in the short-term use of a local well in the Ocotillo/Coyote Wells Groundwater Basin which is part of the sole source aquifer. The IVS project would result in increased erosion potential on the site during construction and increased potential for pollutant runoff.	**Construction Measures** *SOIL&WATER-1:* Drainage Erosion and Sedimentation Control Plan *SOIL&WATER-3:* Industrial Facility SWPPP *SOIL&WATER-5*: NPDES General Permit for Construction Activity **Operations Measures** *SOIL&WATER-2:* Monitoring and verification of water use *SOIL&WATER-4:* Potable water requirements *SOIL&WATER-6:* Waste Discharge Requirements *SOIL&WATER-7:* Storm Water Damage Monitoring and Response Plan *SOIL&WATER-8:* Septic System and Leach Field Requirements *SOIL&WATER-9:* Assured water supply *SOIL&WATER-10:* Decommissioning Plan	None.
709 MW Alternative: Agency Preferred Alternative	Fewer impacts than the IVS project due to the construction of a smaller number of SunCatchers.	Same as the IVS project.	None.
300 MW Alternative	Fewer impacts than the IVS project and the Agency Preferred Alternative due to the smaller number of SunCatchers.	Same as the IVS project and the Agency Preferred Alternative.	None.

Alternative	Direct, Indirect, Short- and Long-Term, and Cumulative impacts	Mitigation Measures, Project Design Features, and Other Measures	Unavoidable Adverse Impacts After Mitigation
Drainage Avoidance #1 Alternative	Fewer impacts than the IVS project and the Agency Preferred Alternative due to the smaller number of SunCatchers.	Same as the IVS project and the Agency Preferred Alternative.	None.
Drainage Avoidance #2 Alternative	Fewer impacts than the IVS project and the Agency Preferred Alternative due to the smaller number of SunCatchers.	Same as the IVS project and the Agency Preferred Alternative.	None.
No Action Alternative: No ROW Grant and No CDCA Plan Amendment	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for No Solar	None.	None.	None.
Land Use Plan Amendment Alternative – No Action Alternative: No ROW Grant and Amend the CDCA Plan for Other Solar	Not determined, but could be potentially similar to the impacts under the IVS project and the Agency Preferred Alternative.	Not determined, but could be potentially similar to the IVS project and the Agency Preferred Alternative.	Not determined, but could be potentially similar to the IVS project and the Agency Preferred Alternative.

Table Source: LSA Associates, Inc. (2010).

Table Key: CDCA Plan = California Desert Conservation Area Plan; IVS = Imperial Valley Solar; MW = megawatts; NPDES = National Pollutant Discharge Elimination System NPDES; ROW = right-of-way; SWPPP = Storm Water Pollution Prevention Program.

Table ES-18 Issues Raised During Scoping

Subject	Scoping Issue
Purpose and Need	Provide a clear and objective statement of the project's purpose and need.
Project Description	Consider granting ROW for Phase I only, with Phase II dependent on approval and finalization of the Sunrise Power Link project; consider establishing requirements for a demonstration of technological and economic viability within 3 to 5 years of approval of ROW before extending the length of the ROW approval; analysis of the energy return on investment to assess the net energy production value of the project; cash bonds to cover future decommissioning costs phased consistent with the project phasing; why is the electricity generated not going to be available to IID for use in Imperial County; how will high winds and fine-grained dust affect the moveable parts of the SunCatcher assembly, the MTBF, and the need to clean the mirrors; how will the assembly be protected from the effects of high winds, sand, and dust; concern regarding viability of technology and going from small prototype to large-scale commercial facility without an intermediate level of facility or experience; project phasing; what factors will contribute to MTBF and ongoing facility maintenance; how will materials for the project be brought to the site; how much hydrogen will be stored on site; where will it be located on site; will components have any resale or recycling value; how much material might end up in landfills; who will be responsible for the bond costs; how will higher summer temperatures in Imperial County affect the system; how much water will need to be used for mirror cleaning; how much will run off into the ground versus evaporation; what effect will gypsum dust from the US Gypsum Plaster City factory have on the facilities; what was the MTBF at the New Mexico site; what is the estimated MTBF at the proposed site; how will TDS in the wastewater impoundment areas be handled to avoid runoff outside the impoundment areas or becoming airborne as dust; how will TDS be disposed of; how will the impoundment areas be managed and maintained; how will the waste impoundment areas be addressed when the facility is decommissioned, including restoration of the land; what strategies will minimize attracting birds to the wastewater impoundment areas; will the technology work; will it hold up to desert weather; not cost competitive; concerned other technologies will quickly make this technology obsolete; taxpayer liability; relationship to the Southwest Power Link and role of Sempra; SunCatcher reliability is not proven in actual operations; issues related to metal creep, metal fatigue, and seal integrity; construction of SunCatchers on site: where will that facility be, how big will it be, what are the impacts of that facility; need data on current wind conditions to understand the effects of wind resulting in downtime; does Sunrise Power Link have sufficient transmission capacity available for the project; if not, are there other sources of capacity available; need better description of evaporation ponds and the waste materials generated in those ponds; costs to produce electricity too high; refer to the San Diego Smart Energy 2020 report; concerned about availability of funding for the project; do not want transmission lines through open desert or through Anza Borrego Desert State Park; concern regarding life expectancy of dishes and what

Subject	Scoping Issue
	happens when they are abandoned; is there available capacity in the Southwest Power Link project: concern about the BLM land use amendment and its relationship to the updated resource management plan; will project need tax breaks or incentives; why not build the fabrication factory in the project area; what will the cost of the project be to ratepayers; concern regarding the differences between Sandia, New Mexico and the Imperial Valley; prototype was a smaller scale and in a different type of area; question regarding the value and disposal of scrap metal when the project is decommissioned; questions regarding parcels that are not part of the project or are immediately adjacent to the project site and how access and other considerations regarding those parcels will be addressed; will project roads will be paved, issue of dust generation: frequency of mirror washing; concerns regarding the reliability of the process and the ability to provide the number of solar dishes proposed for this and other projects; concerns about where the engines will be on the site; concerned that project is in early phases without details on funding and manufacturing of the project component; how does the IVS project energy generation process work; when would construction start; when will the draft land use amendment be released.
Alternatives	Provide a robust range of alternatives; explain why some alternatives were eliminated; look at alternative sites like Mesquite Lake, sites already disturbed by agriculture, or multiple sites, capacities, technologies; prioritize use if already disturbed lands and in proximity to existing transmission lines; suggest the No Action Alternative include other energy-generating options; suggest installing units in San Diego County closer to the users of the electricity or in Imperial County at dispersed locations; use the SunCatcher dish at existing natural gas or coal-fired power plants; need a project between small amount of units tested at Sandia and total proposed number of units for the project; suggest 1 MW; other technologies are less destructive, expensive, and time consuming for approvals/litigation; site closer to water sources to take advantage of gravity flow and avoid the need for pumps; alternative sources for San Diego in San Diego: rooftop solar, photovoltaics, distributed electricity; concerned that industry thinks public lands are a less expensive way of getting land than using fallowed farmlands, abandoned feedlots, areas where the soil is sterile, parking lots, rooftops; in-base and solar rooftop alternatives; disperse units to provide electricity to the prison, schools, hospitals, etc. or to IID or to meet high daytime demand in the county; concern regarding use of public lands for so many projects, including renewable energy when there are alternative areas where those projects could be located; shift from large mega stations to decentralized, localized, and alternative sources.
Air Quality	Ambient air quality; quantify project emissions; identify emissions sources (mobile, stationary, ground disturbance); identify the need for an EEMP and Fugitive Dust Control Plan during construction; particulate matter less than 10 microns in size; prevention of air quality impacts during project construction and operation; concerned regarding dust and potential health (asthma) effects on children; effects of sand storms and white

Subject	Scoping Issue
	clouds from Plaster City; concerned regarding bringing dirty fossil fuels from Mexico to support the SDG&E/Sempra projects; effect of dust on the mirrors and other moving parts of the project; concerns regarding carbon sequestration on the affected land; air quality permit and dust mitigation; airborne soil fungi and potential effects on prisoners at the State Prison and as a general public health issue; potential impacts related to dust, hydrogen gas, and diesel emissions, and cumulative impacts with other area land uses.
Biological Resources	Threatened and endangered species; baseline conditions; how avoidance, minimization, and mitigation measures will protect species; long-term management and monitoring efforts; impacts to sensitive plants and animals; conduct species surveys at appropriate times of the year; invasive species during construction and operation and how they will be controlled, invasive species management plan and restoration of native species; prioritize protection of species in the project area; jurisdictional delineation; wastewater ponds should not be attractive to wildlife; effects on the burrowing owl and the flat-tailed horned lizard; need for a Streambed Alteration Agreement from the California Department of Fish and Game; impacts to big horn sheep and sheep migration route to Mexico.
Climate Change	Address climate change and potential effects on demographics in San Diego; how climate change could potentially affect the project; identify any climate change benefits of the project.
Aviation Impacts	Air space impacts; glare to pilots.
Cultural Resources	Complete surveys of cultural artifacts, sites, and areas in the project area; local archaeologists should be considered; ongoing consultation with Native American tribes is needed; need to address cumulative impacts; describe process for and outcome of government-to-government consultation; discuss any National Register of Historic Places properties and any Indian Sacred Sites; development of a Cultural Resources Management Plan; prioritize protection of area's cultural resources; develop strategies to minimize and mitigate effects on cultural resources; address issues related to site potentially being designated as an ATCC; seek input from Native American groups and the State Historic Preservation Officer; potential for project and cumulative impacts on cultural resources; Concerned regarding impacts on cultural resources, National Register of Historic Places resources, Lake Cahuilla, District for the Yuha Intaglios, and cremation sites; concern regarding survival of Native American culture; include a Native American monitor in site surveys; cumulative impacts of solar and geothermal projects on BLM lands; potential sacrificial burial areas; concern regarding impacts outside immediate disturbance areas; concern regarding cultural resources, archaeological sites, historic trails in the area; concern that cultural studies be conducted by persons familiar with the desert and desert cultures; concern that Native American issues be handled appropriately and sensitively; engage Native American leaders to provide input on the cultural integrity of the area.

Subject	Scoping Issue
Cumulative Impacts	Identify resources that may be cumulatively impacted and the geographic area that will be impacted by the project; look at past impacts on resources; identify opportunities to avoid and minimize cumulative impacts; consider potential for cumulative impacts of this project and other nonrenewable and renewable energy, and land development projects; cumulative impacts on biological resources, cultural resources, environmental justice, air quality, visual resources, and recreation uses/users; concerned about cumulative impacts of various renewable energy projects on 2.5 million acres of BLM lands.
Environmental Justice	Identify environmental justice populations in the project area and potential impacts on those populations; are the impacts disproportionate on those populations; discuss any coordination with environmental justice populations.
Hazardous Materials and Wastes, Hazards, and Public Health and Safety	Potential for direct, indirect, and cumulative impacts of hazardous wastes generated during project construction and operation; identify types and volumes of wastes and handling, storage, disposal, and management plans; consider alternative industrial processes using less toxic materials; effects of hydrogen leakage and strategies to minimize and mitigate impacts; issues associated with the potential for Valley Fever; risks to project employees and prisoners at Centinela State Prison; concern regarding reflection from mirrors on drivers and aircraft.
Land Use	Identify consistency and/or conflicts with Federal, State, Tribal, and local land use plans, policies, and controls in the project study area; address project and cumulative loss of public lands to other uses (particularly energy projects); impacts to community character in the Ocotillo and Nomirage communities; definition of “limited use” designation.
Noise	Impacts to community character in the Ocotillo and Nomirage communities; noise impacts.
Recreation	Effects on recreational users, including potential hazards to those users associated with the project facilities; identify appropriate safety precautions; impacts to recreational experience at the Plaster City Open Area, Superstition Hills Recreation Area, Painted Gorge Recreation Area, and Anza-Borrego Desert State Park; cumulative effects on recreation uses/users and general quiet enjoyment of public lands.
Seismic	Potential damage/risks to project associated with seismic activity, including activity on the nearby Elsinore/Laguna Salada fault.
Socioeconomics	What kind of jobs at what skill levels will be created; will those jobs be met by existing employees in Imperial County, other American workers, or will they require employees from other countries; what are the economic impacts of the project; concern that jobs go to local people and not people brought from outside the community.
Traffic	Include traffic associated with Centinela State Prison.

Subject	Scoping Issue
Visual Resources	Effects on visual resources in the area, including potential cumulative effect of this and other projects in the area; impacts to community character in the Ocotillo and Nomirage communities, dark skies impacts; potential for glare impacts on motorists on Interstate 8, other streets, and United States Navy, United States Border Patrol, and general aviation activities in the area; assess impacts consistent with the BLM Visual Resources Management guidelines; importance of visual resources in the desert; effects of motion-sensitive lighting.
Water Supplies and Use	Evaluate project need for water and effects on water supply; clarify the water rights permitting process; impacts on Ocotillo/Nomirage aquifer; overall effect on demand for water; confirm that the water needed for the project is available and consistent with existing CEC policy; objects to the use of drinkable water from the Ocotillo aquifer for industrial uses; not clear that IID has committed to provide the water needed for the project; does not think there is sufficient water available for the project; the amount of water that would be stored on site and the issue of evaporation; which aquifer water will come from; concern regarding the demand for water to wash the mirrors.
Groundwater	Direct and indirect effects on groundwater; question effects of high TDS in area groundwater.
Surface Waters	Impacts on springs, open water bodies, and other aquatic resources; need for a Section 404 permit; discuss Section 303(d) impaired waters in the project area; effects on watercourses and groundwater; effects of rare floods on project facilities; debris basins located in floodplains; need for a general or individual storm water permit during construction; coordinate with appropriate water quality control agencies.

Table Source: Final Scoping Report (LSA Associates, Inc. 2009).

Table Key: ATCC = Area of Traditional Cultural Concern; BLM = United States Bureau of Land Management; CEC = California Energy Commission; EEMP = Equipment Emissions Mitigation Plan; MTBF = mean time between failure; MW = megawatts; ROW = right-of-way; SDG&E = San Diego Gas and Electric; TDS = total dissolved solids.